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## **Introduction: Digital Methodologies and Practices in ‘Children’s Geographies’**

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Digital technologies are part of children's everyday life and increasingly feature within academics' research practice. The omnipresence of new technologies such as smartphones, tablet computers and digital cameras has altered how children engage with their physical and social surroundings and how researchers capture and give voice to children's contemporary lived experiences. This selection of papers explores how digital technologies are transforming the research process and the theorisation of contemporary childhoods. The authors cover a range of perspectives and embrace diverse theoretical stances, but all have digitally mediated and embodied practices detailing children's mundane space and place experiences at their heart.

How technologies have changed children's everyday lives and also modified researchers' practices have tended to be presented as two separate strands of scholarly discussion, not only within Geography but across the social sciences. The emphasis placed on one strand or other varies between disciplines. In educational research, like geography, both debates are active, with the impact of technology in the acquisition of literacy and other skills developing alongside philosophical discussions on how technology influences the questions asked and modes of inquiry (Biesta, 2016, Loveless and Williamson, 2013, Selwyn, 2011). In Social Studies of Childhood/Youth Studies, theorising on identity and identity formation, and on and off line identities has received considerable research attention whereas an examination of digital methods is less pronounced; virtual worlds are often the backdrop for theoretical reflections rather than the starting point (Bond, 2014, Côté, 2014, Wyn and Cahill, 2015). Similarly, the emphasis in health studies lies in understanding the risks of digitalised childhoods or how new media can be utilised for better interventions (Landhuis et al., 2012, Strasburger et al., 2012, Tate et al., 2013). Where the strands come together, for example in studies investigating the use of gaming technologies to encourage children's physical activity, the emphasis tends to be less on technology use in children's everyday lives but rather on the potential to intervene and modify their daily routines (Barnett et al., 2013).

In this commentary, we contend that there is a need to bring the theoretical and methodological strands closer together, exploring the use of such technologies to understand children's everyday worlds theoretically and practically. Such an endeavour will force us to ask different research questions, to reflect on ethical and

moral stances in a more nuanced light, to employ both on and offline methods in more creative ways and to push the boundaries of theorising children's everyday activities in increasingly digitally- mediated childhoods. In this introductory essay, we elaborate on these views and introduce the papers that comprise the special section.

### **Making sense of children's digital worlds**

The impact of technology on children's lives has been both cursed and praised. Being 'plugged in' is often discussed as a major threat to their health and wellbeing: reported increases of cyber bullying, sexual abuse and the sheer amount of time children spend engaged in sedentary activities are all examples of this perceived threat (Goerzig and Livingstone, 2012, Livingstone and Bulger, 2013, Porter et al., 2015, Smith, 2013, Strasburger et al., 2012, Tarapdar and Kellett, 2013). Other researchers bemoan children's loss of creativity, face-to-face contact and environmental literacy (Gill, 2007, Louv, 2005, Malone, 2007). The ways risk is portrayed in such studies is the starting point for Curti and Aitken's paper (this collection). They argue that a more productive way to think about child-media relations takes the 'power' landscapes in which digital technologies operate into account and places these contexts within wider debates on 'child-adult being/becoming'.

Yet technologies can also enrich children's lives by overcoming physical, socio-economic or cultural barriers. For instance, Freier and Kahn's (2009) collection of papers addressed how technological environments can be designed to foster rather than harm children's development. More recently, writers have shown that children can maintain relationships with friends and family members located in different cities or overseas (Longhurst, 2013, Sime and Fox, 2014), explore virtual landscapes with children from different backgrounds around the world (Ash and Gallacher, 2011, Dezuanni et al., 2015, Marsh, 2010), or positively change learning and communication experiences for children with disabilities or absent and present caregivers (Ganong et al., 2012, Holloway and Valentine, 2003, Kagohara et al., 2013). Freeman and colleagues in their paper (this collection) draw on notions of digital literacy to gain insights into children's use of nature in their neighbourhood via a child-operated Geographical Information System (GIS).

On a broader level, endeavours such as that sketched by Freeman et al. raise questions related to a critical engagement with ideas of 'digital citizenship' and inequalities in access to digital technologies (Collin, 2015, de Almeida et al., 2012, Gibbons, 2015, Hanewald and Ng, 2010). Further, issues of digital literacy have also been oriented towards children's cultural connections and the meaning-making mediated by these new technologies and associated products (Buckingham, 2011, Edwards, 2014, Ruckenstein, 2010). In this regard, Plowman's paper in our collection speaks to the need to engage with 'context', arguing for the need to place children's practices within a holistic and multi-scalar frame. Children develop and negotiate nuanced on- and off- line identities and navigate or resist social structures and expectations, notably through social media sites. The global reach of these technologies has increased children's visibility, bringing to the fore new encounters and the need to cope not only with complex social nuances but also privacy breaches. It has fostered increasing awareness of the complexities of on- and off-line spaces and their relationships as young people go about their everyday lives in different socio-spatial contexts (Black et al., 2015, Livingstone, 2008, Young, 2013). In Prout's words, these technologies "make the local worlds of childhood more visible to each other" (Prout, 2005: 34).

For a critical theorisation of the impact on, and children's and young people's engagement with, diverse digital childhoods, researchers have turned to and expanded existing concepts, in order to speak to the new challenges. For example, Lasén (2010) drew on Lefebvre's 'Rhythmanalysis' (2004) to showcase how companion devices such as smart phones alter the urban experience and mediate playful practices in public places in new ways. Using the example of 'flash mobs' she drew out how the public sphere is mediated by a rhythmic crowd which is the result of negotiations and sometimes clashes between commercial conditions (e.g. social media), institutional regulations (who and under what conditions public places can be used) and young people's aspirations, habits and moods. Nansen and colleagues (forthcoming) draw on Gibson's (1979) affordance theory to discuss how mobile phones can mediate primary school children's independent mobility in urban environments. They argue that when mobile phones are viewed as travel companions their function is expanded beyond a parental electronic 'leash'; rather, they become a companion in the literal sense, not only by affording entertainment,

but also by serving as a mediator for children's agency. Mobile phones can enable reaction to, and negotiation with, emerging and spontaneous opportunities for mobility (e.g. meeting a friend, exploring an area) spontaneously throughout the day and, in turn, embedded functions of smart phones such as cameras, pressure sensors, and GPS can record these encounters in various ways, including visually, locationally, and temporally.

The physical spaces in which children's activities take place, and how their off/online connections contribute to children's sense of place in a digitalised world, however, remains under-explored. This gap is taken up by Danby and colleagues (this selection) in their exploration of pre-schoolers' sense of place via GoogleEarth. Similarly, Rooney (2015) uses the example of the virtual gaze to highlight the emotional complexities of the emerging physical/virtual landscape nexus in a digital world. Expanding on Ahmend's (2004) and Probyn's (2005) theorisation of the emotion 'shame', she argues that the effects of shame in the virtual gaze are exacerbated because the traditional boundaries of scale, space and time in children's experiences are blurred when daily activities are increasingly undertaken under the multiple virtual gazes of unknown actors and in a context where information circulates long after its production. Although Rooney (2015) discusses physical and virtual landscapes, nuanced geographical understandings often receive little attention. More generally, place and space play a largely implicit role in the majority of discussions on children and young people's digital worlds (Bond, 2014, Buckingham, 2000, Loveless and Williamson, 2013, Miller and Sinanan, 2014), warranting a more critical engagement with 'space and place' across disciplines and age-groups as reflected in the papers in this collection.

### **Using digital technologies in research with children and young people**

Some researchers have begun to use new technologies to yield insights into children as socio-spatial beings. To make sense of, and gain better understandings of, children's everyday life, studies have followed children with a GPS tracker (Alarasi et al., in press, Ergler, 2011, Loebach and Gilliland, 2010, Walker et al., 2009), videoed and photographed children's routes to school (Kullman, 2012, Pooley et al., 2010) or engaged in participatory videoing or Soft(qualitative) GIS for representing young people's life in a neighbourhood (Blazek and Hraňová, 2012, Kytta, in press), and

used Facebook and Twitter as discussion forums and phones to respond to surveys or interventions (Korson, 2014, Lim et al., 2008, Luh Sin, 2015). Opportunities to make use of quickly-changing technologies in research projects, as well as for researching children's technological practices, are diverse and necessarily implicit in studies of, for example, routes to school. However, the roles place and space play in these studies is arguably too readily reduced to simple spatial coordinates. This is despite Adams' (1997) early observation that place metaphors play an important role in the digital world (e.g. 'chat rooms') and are a way to "make sense of the immateriality of the virtual" (Paiva, 2014). Mixed methodologies signal a way forward. At first glance, work by Oliver et al. (2014) that used GIS and global positioning system (GPS) trackers to gain insights into children's behaviour might appear to constitute reductive spatial analysis. In their discussion of 'what constitutes a trip', children's activities are reduced to destinations and routes. Yet this approach was complemented in the same study with go-along interviews, a more appropriate methodology for accessing children's understandings of place.

We contend, therefore, that aspirations towards knowing children's experiences more thoroughly need to be tempered by recognition of the relative youthfulness of the methods available, and the infancy of our understanding of how to use the data they generate in ways that are both robust and can deliver meaningful new knowledge (for which see also the paper by Freeman et al., this collection). In other words, we need to bear in mind both the limits of current methods and the depth of the challenge we face in developing more searching analytical approaches for understanding children's sense of place in a digitalised world (see also Danby et al. and Plowman this collection).

There is a need to recognise the ways that "virtual spaces have become, culturally, actual spaces" and that, as such, they have also become part of everyday life spaces (Paiva, 2014, 2). To this extent, then, the challenge is not only to find ways for new technologies to better represent children's worlds, but also ways in which we can better understand virtual spaces and technologies as children's worlds in and of themselves. Plowman's article, for example, is a quest to move beyond traditional understandings of 'context' in order to think more fluidly about relationships between the place in which activities occur and how we articulate and theorise both. Similarly,

Curti and Aitken invite the reader to move beyond dichotomies and use technology (media) to renegotiate conventional understandings of childhood and adulthood by drawing on Deleuze to examine media both as practice and as structure. Danby and colleagues' example of two boys negotiating their sense of place indicates how a virtual map and children's real life experiences converge, thereby contributing to the discussion of how online worlds have become a 'real' space. In contrast, by drawing on a GIS in which children note their use of local nature spaces, Freeman and colleagues show how risk discourses in relation to technology can be rewritten and alternative realities portrayed to policy makers and planners.

However, with the new technological opportunities available to researchers and children, is there a danger that space, once again, becomes a container, rather than a meaningful place in which activities occur? There is a risk that researchers will be enticed by the allure of new modes of data collection in the absence of robust approaches to data analysis. By way of example, although developments related to qualitative or 'soft' GIS (Cope and Elwood, 2009) allow children and young people to voice their experiences in and of place, data that are disengaged from a larger context are prone to reducing experiences to simple, value-laden descriptions (Alarasi et al., in press, Wridt, 2010). Such potential over-simplification speaks to the challenge of ensuring a robust match between methodology and research question. On a broader scale, a critical engagement with digital technologies will require interdisciplinary skills – in data collection, analysis and interpretation - to be progressed with care (Conradson, 2011, McEwan and Goodman, 2010, Smith, 2000). It will be necessary to forge understandings between those with technical expertise and those with the nuanced theoretical interests we signal here (and which are further exemplified by our selection of papers).

The challenge will be to develop analytical approaches that can sensibly utilise a pragmatic selection of the well-nigh limitless data that digital technologies can generate, and find ways to integrate and advance the essential triad of robust research: theory, methodology, analytic approaches. We seek, through this commentary and selection of papers, to initiate a broader conversation on the links between children's geographies research, digital technologies and digital childhoods.



Holloway's (2014) commentary 'Changing Children's Geographies' on the state of the discipline has been an inspiration in the development of the set of papers which follow. It not only prompts us to propose the addition of digital technologies to debates on future challenges of the discipline, but also to reinforce her call to jettison "our existing modes of analysis" (Holloway, 2014:388) and engage more explicitly in discussions about "what we might want to keep, combine or use to refine" children's everyday life. In a digitalised world this involves drawing on a combination of the theoretical and empirical stances on digitalised practices and methodologies.

Children's digital lifeworlds will still need to be placed in their wider socio-spatial contexts and experiences. Children will continue to shape and be shaped by the lives of their family members, peers, political and economic institutions, no matter how much of this is embedded within a digitalised environment. We need to reengage with what it means for children's rights to participate in society and weigh up children's competency as meaning makers alongside concerns for their protection under increasing on and offline surveillance. The limits of age, risks, competencies and opportunities need to be rethought in this rapidly transforming and digitalising world. We follow Holloway in suggesting a move 'beyond the all-knowing child' towards incorporating a multi-layered analysis and associated re-engagement with children as "agents and socio-structural category" (Holloway, 2014:386). However, we suggest an approach that more explicitly takes into account and transects scales, space and time. Theoretically, this might mean a revival and expansion of theoretical discussions of structure-and-agency (e.g. drawing on Giddens and Bourdieu) and adapting them to digital children's geographies. Alternatively, it could involve redrawing our contemporary understanding of children as digital 'beings and becomings' by building on recent engagements with the writings of Heidegger, Deleuze, Lyotard, Stiegler or Honneth (e.g. Aitken, 2014, Avriel-Avni et al., 2010, Curti and Moreno, 2010, Duhn, 2014, Mitchell and Elwood, 2013, Noble, 2009, Pyyry, 2015, Thomas, 2012). This would enable an extension of ongoing discussions around what digital technology means for children's geographies. We might also ask what such a re-working means in different geographical locations and knowledge production contexts or for children's participatory rights and protection.

In our selection of papers, Plowman highlights how the entanglement of digital devices and everyday life blurs the boundaries of the previously so neatly definable research setting of the home. Curti and Aitken challenge us to engage with how our understanding of technology influences our intellectual engagement with the globalisation of media as threat or opportunity. Freeman and colleagues come to the conclusion that their research approach paved the way for more child-led digitalised mapping methods as a different way to co-produce knowledge and implicitly address children's rights to participate in digitalised research. Danby, by contrast, reveals how young children discover and make connections when they are invited to explore the virtual in a self-directed manner.

While it is tempting to see the digital revolution of the last two decades as heralding a potentially paradigmatic shift in our thinking (Kuhn, 1977), change in research methods and theoretical understanding is likely to be incremental rather than revolutionary. Disruptions in thinking are likely to inspire new (inter and trans)disciplinary pathways when we ask ourselves in what ways our disciplinary foundations and epistemological stances help or hinder fruitful discussions. Children's geographers are well placed to ask critical questions about children's digitalised landscapes and childhoods, but we may need to push our own affinities and anxieties about digital childhoods out of the way in order to ask critical questions. For example, how do children and young people's (or our own) sense of place as researchers (Cresswell, 2004) shape, question or disrupt discussions about digital childhoods and how do we document children's everyday life in this arena? It might sound mundane, but researchers have variable competencies in the technologies and digital worlds which many children are completely at ease with. The co-production of knowledge with a generation at ease with digital technologies opens new opportunities, but also raises a number of moral and ethical issues.

### **Rethinking the ethics of research for a digital age**

Children's geographers have traditionally been at the forefront in problematising institutional ethical procedures and engaging in critical ethical research practices beyond institutional requirements (Porter et al., 2012, Skelton, 2008). Researchers have frequently pointed out the rights of children to participate in research, children's

competence as meaning makers and the need for ethical frameworks that address the complexities of research *with* children and young people as well as the importance of ethical relationships in knowledge production (Alderson and Morrow, 2011, Gallacher and Gallagher, 2008, Horton, 2008, Morrow and Richards, 1996, Skelton, 2008). But it seems that the emergence of digital technologies has redrawn these contours of procedures and practices almost unnoticed given the relative silence of children's geographers on ethical issues in research on and with children's digital lives.

Digital technologies have begun to blur the lines between on/offline spaces and research environments, between public and private spaces as well as calling into question power issues and participation. New and complex vulnerabilities for participants are emerging in research environments with digital technologies and lives and we contend that the commonly postulated reflective research practice (Christensen, 2000, Rose, 1997, van Blerk and Kesby, 2013) therefore becomes even more important in the digital age, which we outline by touching briefly on a few interconnected issues.

The traditional overemphasis on the data collection process neglects potential ethical issues in other parts of the research cycle when digital technologies are employed. While some concerns such as the ethical imperative of informed consent will continue to be important, some taken for granted assumptions such as the protection of participants' privacy need to be rethought. Conventional ethical concerns around observation (Kearns, 2010) become, for example, more complex in digital settings. It is neither technically possible to anonymise participants' stories if these include georeferenced data such as social media activities on mobile devices or digital images nor can we guarantee lifelong confidentiality in online depositories (see also Freeman et al. in this issue). We should therefore more actively engage in debates about what confidentiality, privacy and anonymity mean in digitalised research environments for children's geographers and child participants.

Previously-accepted procedures to guarantee confidentiality and anonymity become increasingly permeable through digitalised technologies. Information from online blogs or diaries, which might have been published only for close friends and family members, seem readily available for analysis (Ardoin et al., 2015, Snee, 2014). Even

when researchers ask for permission to use this publicly available information for research purposes, how can participants' confidentiality be upheld when quotes can be copied into search engines to trace the original authors? To circumvent these issues, researchers can establish closed chat rooms, password-protected online diaries or open closed groups in social networks (Downing, 2013, Talbot, 2013). But what happens when participants' privacy is breached through technical errors? How can we guarantee the confidentiality of our participants when their identity is saved online? How can we deal with the emotional stress for participants and the researchers caused by such breaches of trust in the research relationship?

Also, how do we negotiate between child-participants' preferences for their names or faces included in the dissemination of findings and the demands of ethics committees for the masking of identity? There is a temporal dimension to such a dilemma for we are now in a context in which information circulates long after its production. Disclosures and exposure that children (and their parents) may hanker after proudly as ten year olds may be scorned a few years later. A key challenge (both ethically and practically) is that the digital trace continues irrespective of a change of mind.

Further, we need to engage with issues about 'what is considered as data' and who 'owns' data. Digital technologies permit dissemination of research findings in new ways and allow the storing of raw and analysed data online with yet unknown consequences. Further, funding agencies are beginning to demand that such data is made publicly available (Arzberger et al., 2004 , Miller et al., 2012). Practice and principles lag behind processes in addressing issues of data ownership and moral or ethical engagement with existing data and the question of whether the data are stored via 'open-access' or accessed (il)legitimately in online depositories. Mining data from depositories, for example, allows researchers to analyse topics far beyond participants' original consent to involvement in a particular research project. Individual answers to defined questions turn into raw material available for unrelated analyses and purposes. For example, a study on children's independent play practices could be hijacked to draw conclusions about parental time investment in their offspring. Moreover, on the other side of the coin, stories without traceable origin floating in an online depository can be turned into copyright protected content such as storylines for children-oriented books, movies, advertisements or apps. It

remains a moot question whether, once data are rendered open-access and purportedly depersonalised, participants lose the ownership of their own stories.

Moral and ethical issues now arising around digitalised practices have to be seen in their wider socio-spatial, economic and political contexts and associated processes. However, it is surely an obligation to grapple with them as we researchers take part in creating, shaping and resisting these realities. With these critical perspectives and potential directions in mind, we now consider the set of substantive papers that follow.

### **The papers in the special section: digitalised practices and methodologies**

The papers which follow had their thematic beginnings in presentations at the 5th International Conference "Researching children's everyday lives: socio-cultural contexts", held at the Centre of Children and Youth Studies in Sheffield in July 2014. As conversations continued, other papers and ideas were added into the mix. The four papers deal with life stages of children and young people ranging from toddlers, to pre-schoolers, primary school children and teenagers. While some aspects of digitalised childhoods are particular to an age, socio-economic group or cultural context, reading the papers side by side indicates the value of engaging in discussion not only beyond a particular life stage, but also across disciplinary and geographical contexts. The geographies inscribed in the papers reflect contributors' disciplinary homes (Geography, Education, Planning) and locations (Scotland, the US, Australia, New Zealand). The papers focus on how technologies have permeated children's everyday lives in different places; how this temporal change can be captured through different methods and theoretical lenses; and how technologies permeate disciplinary research practices and theoretical discussions. In doing so, the papers focus on, but are not limited to, extending the following discussions:

- Children's place and meaning making through, with and against technologies
- Children's capabilities and (changing) everyday engagement with technologies; their often fluid movement between virtual and real worlds

- The rethinking of causal models that continue to dominate popular accounts of "media power"
- Critical reflections on the use of technologies in research projects and the need for flexible and adaptive methodologies and multi-scalar and multidimensional frameworks
- Theoretical lenses available for thinking about children's everyday beings/becomings, technologies and context

The first two papers (Danby et al. and Freeman et al.) both offer closely-observed analyses of children's capabilities. They show interaction with maps as social processes, whether presented as linking to place (Danby et al.) or space (Freeman et al.). Danby's analysis of fine-grained transcripts focuses on two young pre-school children's interaction with Google Earth and their negotiations of a sense of place. Young children's capabilities, in terms of understanding complex concepts and what happens around them in their everyday life, have been particularly underestimated in the past. Danby and colleagues highlight pre-schoolers' abilities to engage with an online program and their abilities to link their everyday encounters of places to virtual representations. The teacher has only minimal presence and does not interfere in the pre-schoolers' 'desire to know' encouraging opportunities to discover new, self-directed, understandings. This is in contrast to the vantage point offered by Freeman and colleagues. Their adult-directed study questions children's loss of nature experience, utilising a GIS computer-mapping interface for children to represent their knowledge of and encounters with natural environments in their neighbourhood. Primary school aged children showcased their micro-scale knowledge of local spaces in the online aerial photographs that were presented, even when technical difficulties appeared. Despite the fact that both papers offer new insights into children's place and space experiences, they are still based on adult observations of child interactions with digital technologies. This point is salutary and reveals the youthful state of this type of children's geography in that we have yet to find ways to fully bring children's voices into research. For now, the involvement of known adults is arguably a pragmatic compromise.

The third and fourth papers (Plowman; Curti & Aitken) are both reflective and theoretically engaged think pieces. While Plowman's discussion bridges theoretical

and methodological compositions on digitalised childhoods, Curti and Aitken focus on the impact of technologies on the body. Place and space are the mediating factors in Plowman's discussion on building new ways of thinking about the context in which children engage with technology – the Internet of Things – in the home for play and learning. Her main contribution is to encourage researchers to consider the multiscalar and multidimensional notions of 'context' when unpacking children's digitalised worlds. She emphasises that such an endeavour also requires us to simultaneously think about and rearrange existing methodologies to suit the context. In doing so, Plowman also highlights the difficulties of distinguishing relevant information from noise in ethnographic research as new 'contexts' emerge in the analysis. This observation connects with Danby and colleagues' reflection on their ethnomethodological approach to recognizing children's competencies in manipulating their socio-spatial and digitalised worlds.

Curti and Aitken encourage even wider reflection on the responsibilities arising from an increasingly and rapidly transforming digitalising world. By asking what bodies are, and what they do and become under new technologies, they situate children and young people within a media-child-adult assemblage that opens up trajectories for rethinking children and their relations to media. In doing so, they examine the notion of children and media as 'networks-at-play' with wider consequences, drawing attention to the shadows of corporate power as they fall on young lives and the far-reaching impacts on the shaping of digital engagements across the globe.

These four papers showcase the diverse range of methods that can be employed for documenting children's everyday digitalised life ranging from ethnographic (Danby et al.) to quantitative approaches (Freeman et al.). Diversity in the theoretical lenses used to make sense of children's everyday technological practices is also represented, with papers drawing on socio-cultural/eco-cultural (Plowman, Danby et al.) and non-representational approaches (Curti & Aitken), as well as 'alter childhoods' (Freeman). The primary focus is methodology in Freeman et al. but theoretical in the others (Plowman, Curti & Aitken, Danby et al.). However they all discuss ways in which technologies mediate children's experience in place and

space and the ways we can study and theorise how technologies have changed, mediated and effected children's spatiality.



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